

What is claimed is:

1. (Currently amended) An automatic transmission comprising:

a planetary gear unit coupled to a transmission mechanism, wherein a drive train pathway of the automatic transmission includes the transmission mechanism and the planetary gear unit; and

a plurality of engagement elements that engage to couple planetary gear elements of the planetary gear unit, wherein the plurality of engagement elements are selectively engaged to provide each of a set of selectable gears, wherein the set of selectable gears includes:

a low-speed forward gear,

a high-speed forward gear, and

a reverse gear;

a transmission casing;

an input shaft;

an output shaft;

wherein the planetary gear elements of the planetary gear unit include at least one sun gear, a pinion carrier and a ring gear, a first sun gear coupled to the input shaft and the pinion carrier coupled to the output shaft, and a second sun gear engaged with the pinion carrier;

wherein the plurality of engagement elements includes at least a first brake, a second brake and a first clutch;

wherein the ring gear is selectively coupled to the transmission casing by engaging one of the first brake and the second brake;

wherein two of the planetary gear elements are selectively coupled to each other by engaging at least the first clutch;

wherein the low-speed forward gear is selected by engaging the first brake;

wherein the high-speed forward gear is selected by engaging the first clutch; and

wherein the reverse gear is selected by engaging the second brake.

2. (Original) The automatic transmission of claim 1, wherein the transmission mechanism is a continuously variable transmission mechanism.

3. (Currently amended) The automatic transmission of claim 1, further comprising:

~~a transmission casing;~~

a first damper in the drive train pathway; and

a second damper coupled to an engagement element of the set of engagement elements that couples interspaces between rotatory elements of the planetary gear elements and the transmission casing.

4. (Canceled).

5. (Currently amended) The automatic transmission of claim 4, ~~further~~ comprising:1.

~~a transmission casing; and~~

~~an output shaft,~~

wherein the plurality of engagement elements includes a reverse brake as the second brake, a forward clutch as the first clutch, a low brake as the first brake and a high/forward clutch,

wherein the pinion carrier is selectively coupled to the transmission casing by engaging the reverse brake, and is selectively coupled to the output shaft by engaging the forward clutch,

wherein the ring gear is selectively coupled to the transmission casing by engaging the low brake, and is selectively coupled to the output shaft by engaging the high/reverse high/forward clutch.

6. (Currently amended) The automatic transmission of claim 5, wherein the low-speed forward gear is selected by engaging both the low brake and the forward clutch,

wherein the high-speed forward gear is selected by engaging both the

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high/reverse high/forward clutch and the forward clutch, and

wherein the reverse gear is selected by engaging both the high/reverse high/forward clutch and the reverse brake.

7. (Currently amended) ~~The automatic transmission of claim 5, An~~
automatic transmission comprising:

a planetary gear unit coupled to a transmission mechanism, wherein a drive train pathway of the automatic transmission includes the transmission mechanism and the planetary gear unit;

a plurality of engagement elements that engage to couple planetary gear elements of the planetary gear unit, wherein the plurality of engagement elements are selectively engaged to provide each of a set of selectable gears, wherein the set of selectable gears includes:

a low-speed forward gear,

a high-speed forward gear, and

a reverse gear;

a transmission casing; and

an output shaft,

wherein the planetary gear unit is a single pinion planetary gear unit including a sun gear, a pinion carrier, and a ring gear as rotatory elements,

wherein the sun gear is coupled to the input shaft,

wherein the plurality of engagement elements includes a reverse brake, a forward clutch, a low brake and a high/forward clutch,

wherein the pinion carrier is selectively coupled to the transmission casing by engaging the reverse brake, and is selectively coupled to the output shaft by engaging the forward clutch,

wherein the ring gear is selectively coupled to the transmission casing by engaging the low brake, and is selectively coupled to the output shaft by engaging the high/forward clutch,

wherein the single pinion planetary gear unit and the reverse brake are positioned on a first common axis extending radially relative to the input shaft, and

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wherein the low brake, the ~~high/reverse~~ high/forward clutch, and the forward clutch are positioned on a second common axis adjacent to the first common axis.

8. (Original) The automatic transmission of claim 7, wherein the second common axis is parallel to the first common axis.

9. (Currently amended) The automatic transmission of claim [[5]] 7, wherein the reverse brake includes a band-braking system and the first common axis is located axially closer to the input shaft than the second common axis.

10. – 14. (Canceled).

15. (Withdrawn-currently amended) The automatic transmission of claim 1, ~~further comprising:~~

~~a transmission casing;~~

~~an input shaft; and~~

~~an output shaft,~~

wherein the planetary gear unit is a double pinion planetary gear unit ~~including a sun gear, a pinion carrier, and a ring gear as rotatory elements,~~ ~~wherein the sun gear is coupled to the input shaft,~~ wherein the plurality of engagement elements includes a low brake as the first brake, a high/reverse clutch, a reverse brake as the second brake and a forward clutch as the first clutch,

wherein the pinion carrier is selectively coupled to the transmission casing by engaging the reverse brake, and is selectively coupled to the output shaft by engaging the forward clutch,

wherein the ring gear is selectively coupled to the transmission casing by engaging the low brake, and is selectively coupled to the output shaft by engaging the high/reverse clutch,

wherein the low-speed forward gear is selected by engaging both the low brake and the forward clutch,

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wherein the high-speed forward gear is selected by engaging both the high/reverse clutch and the forward clutch, and

wherein the reverse gear is selected by engaging both the high/reverse clutch and the reverse brake.

16. (Withdrawn-currently amended) The automatic transmission of claim 15,

wherein the double pinion planetary gear unit and the reverse brake are positioned on a first common axis extending radially relative to the input shaft,

wherein the low brake, the high/reverse clutch, and the forward clutch are positioned on a second common axis adjacent to the first common axis.

17. (Withdrawn-Currently amended) The automatic transmission of claim 16, wherein the reverse brake includes a band-braking system and the first common axis is located axially closer to the input shaft than the second common axis.

18. (Withdrawn) The automatic transmission of claim 15, further comprising a set of pinion shafts to axially support a corresponding set of pinion gears,

wherein the pinion carrier is a first pinion carrier, further comprising a second pinion carrier,

wherein the first pinion carrier and the second pinion carrier support opposite ends of the set of pinion shafts.

19. (Canceled).

20. (Withdrawn-currently amended) The automatic transmission of claim 1, ~~further comprising: a transmission casing; an input shaft; and an output shaft;~~

wherein the ~~planetary gear unit includes:~~ at least one sun gear comprises:

a front sun gear, and

a rear sun gear,

wherein the pinion carrier comprises a common pinion carrier which supports

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a short pinion meshed with the rear sun gear and a long pinion meshed with the front sun gear,

~~wherein the ring gear is a Ravigneaux planetary gear unit with a rear ring gear as a rotatory element meshed with the long pinion,~~

~~wherein the rear sun gear is the first sun gear coupled to the input shaft,~~

~~wherein the common pinion carrier is couple to output shaft,~~

~~wherein the plurality of frictional engagement elements includes a first brake, a second brake, and a first clutch,~~

wherein the front sun gear is selectively coupled to the input shaft by engaging the first clutch, and is selectively coupled to the transmission casing by engaging the first brake,

wherein the rear sun ~~ring~~ gear is selectively coupled to the transmission casing by engaging the second brake,

wherein the low-speed forward gear is selected by engaging ~~both~~ the first brake,

wherein the high-speed forward gear is selected by engaging the first clutch, and

wherein the reverse gear is selected by engaging ~~both~~ the second brake.

21. (New) The automatic transmission of claim 7, further comprising:
a transmission casing;
a first damper located on an input shaft to the planetary gear unit; and
a second damper coupled to the low brake and the transmission casing.

22. (New) The automatic transmission of claim 7, wherein the transmission mechanism is a continuously variable transmission mechanism.

23. (New) The automatic transmission of claim 7,
wherein the low-speed forward gear is selected by engaging both the low brake and the forward clutch,
wherein the high-speed forward gear is selected by engaging both the

high/forward clutch and the forward clutch, and

wherein the reverse gear is selected by engaging both the high/forward clutch and the reverse brake.